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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,046	07/14/2003	Seung-Jae Han	4-4	6070

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EXAMINER
NGUYEN, KHAI MINH

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 04/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/619,046	HAN ET AL.
	Examiner	Art Unit	
	Khai M. Nguyen	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/2/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5,7,8,11-14,16,18,19,22-27,29,31,32,35 and 36* is/are rejected.

7)☒ Claim(s) *4,6,9,10,15,17,20,21,28,30,33 and 34* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5)☐ Notice of Informal Patent Application (PTO-152)
6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's argument with respect to claim 1-36 have been considered but are

moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims **1-3, 5, 7-8, 11-14, 16, 18-19, 22-27, 29, 31-32, and 35-36** are rejected

under 35 U.S.C. 103(a) as being unpatentable over Brody et al. (U.S.Pat-4670899) in

view of Lo et al. (U.S.Pat-6792275).

Regarding claim 1, Brody teaches a method for calculating a transmission

characteristic threshold for use in assigning a user to one layer in a plurality of layers in

a wireless communications network (fig.1-2, abstract), said method comprising:

calculating a first balancing metric based on an operating characteristic of said

first layer (fig.5a-5b, col.7, lines 4-24, col.11, lines 14-33, col.15, lines 26-45),

calculating a second balancing metric based on an operating characteristic of

said second layer (fig.5a-5b, col.7, lines 4-41, col.11, lines 14-33, col.15, lines 26-45).

Brody fails to specifically discloses adjusting said transmission characteristic

threshold in response to the value of said first balancing metric relative to said second

balancing metric. However, Lo teaches adjusting said transmission characteristic

threshold in response to the value of said first balancing metric relative to said second balancing metric (fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use adjusting said transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric as taught by Lo with Brody teaching in order to provide balance the channel utility between the micro cell and macro cell.

Regarding claim 2, Brody and Lo further teaches the method of claim 1 further comprising the step of assigning said user to a layer in response to the value of a first user transmission characteristic of a transmission from said user relative to said adjusted transmission characteristic threshold (see Lo, fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8).

Regarding claim 3, Brody and Lo further teaches the method of claim 1 wherein said transmission characteristic threshold is a threshold corresponding to the size of the data to be transmitted to or from said user (see Lo, fig.1, line 61 to col.4, line 8).

Regarding claim 5, Brody and Lo further teaches the method of claim 1 wherein said transmission characteristic threshold is a threshold corresponding to the velocity of said user (see Brody, col.6, lines 43-56, col.7, lines 4-24).

Regarding claim 7, Brody and Lo further teaches the method of claim 1 wherein said first operating characteristic corresponds to an average number of users (see Brody, fig.13, col.24, lines 6-28, col.25, line 50 to col.26, line 7).

Regarding claim 8, Brody and Lo further teaches the method of claim 1 wherein

said first operating characteristic corresponds to the expected system load as seen by said user (see Brody, col.7, lines 4-41).

Regarding claim 11, Brody and Lo further teaches the method of claim 8 wherein said first balancing metric is determined by calculating the number of users in the first layer of said network and said second balancing metric is determined by calculating the number of users in said second layer of said network (see Lo, fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8).

Regarding claim 12, Brody teaches apparatus for calculating a transmission characteristic threshold for use in assigning a user to one layer in a plurality of layers in a wireless communications network (fig.1-2, abstract), said apparatus comprising:

means for calculating a first balancing metric based on an operating characteristic of said first layer (fig.5a-5b, col.7, lines 4-24, col.11, lines 14-33, col.15, lines 26-45);

means for calculating a second balancing metric based on an operating characteristic of said second layer (fig.5a-5b, col.7, lines 4-24, col.11, lines 14-33, col.15, lines 26-45); and

Brody fails to specifically discloses adjusting said transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric. However, Lo teaches adjusting said transmission characteristic threshold in response to the value of said first balancing metric relative to said second balancing metric (fig.1, col.1, lines 39-57, col.3, line 61 to col.4, line 8). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

made to use adjusting said transmission characteristic threshold in response to the

value of said first balancing metric relative to said second balancing metric as taught by

Lo with Brody teaching in order to provide balance the channel utility between the micro

cell and macro cell.

Regarding claim 13, Brody and Lo further teaches the apparatus of claim 12

further comprising means for assigning said user to a layer in response to the value of a

first user transmission characteristic of a transmission from said user relative to said

adjusted transmission characteristic threshold (see Lo, fig.1, col.1, lines 39-57, col.3,

line 61 to col.4, line 8).

Regarding claim 14, Brody and Lo further teaches the apparatus of claim 12

wherein said transmission characteristic threshold is a threshold corresponding to the

size of the data to be transmitted to or from said user (see Lo, fig.1, col.3, line 61 to

col.4, line 8).

Regarding claim 16, Brody and Lo further teaches the apparatus of claim 12

wherein said transmission characteristic threshold is a threshold corresponding to the

velocity of said user (see Brody, col.6, lines 43-56, col.7, lines 4-24).

Regarding claim 18, Brody and Lo further teaches the apparatus of claim 12

wherein said first operating characteristic corresponds to an average number of users

(see Brody, fig.13, col.24, lines 6-28, col.25, line 50 to col.26, line 7).

Regarding claim 19, Brody and Lo further teaches the apparatus of claim 12

wherein said first operating characteristic corresponds to the expected system load as

seen by said user (see Brody, col.7, lines 4-41).

Regarding claim 22, Brody and Lo further teaches the apparatus of claim 18

wherein said first balancing metric is determined by calculating the number of users in

the first layer of said network and said second balancing metric is determined by

calculating the number of users in said second layer of said network (see Lo, fig.1,

col.1, lines 39-57, col.3, line 61 to col.4, line 8).

Regarding claim 23, Brody teaches an assignment manager for assigning a user

to one layer in a plurality of layers in a wireless communications network (fig.1-2,

abstract), said assignment manager (fig.1-2, element 20) comprising:

a first circuit for calculating a first balancing metric based on an operating

characteristic of said first layer (fig.5a-5b, col.7, lines 4-24, col.11, lines 14-33, col.15,

lines 26-45);

a second circuit for calculating a second balancing metric based on an operating

characteristic of said second layer (fig.5a-5b, col.7, lines 4-24, col.11, lines 14-33,

col.15, lines 26-45); and

Brody fails to specifically discloses a third circuit for adjusting a transmission

characteristic threshold in response to the value of said first balancing metric relative to

said second balancing metric. However, Lo teaches a third circuit for adjusting a

transmission characteristic threshold in response to the value of said first balancing

metric relative to said second balancing metric (fig.1, col.1, lines 39-57, col.3, line 61 to

col.4, line 8). Therefore, it would have been obvious to one of ordinary skill in the art at

the time the invention was made to use a third circuit for adjusting a transmission

characteristic threshold in response to the value of said first balancing metric relative to

said second balancing metric as taught by Lo with Brody teaching in order to provide

balance the channel utility between the micro cell and macro cell.

Regarding claims 24, 26, and 36, Brody and Lo further teaches the assignment

of claim 23 wherein said first circuit, said second circuit, said third circuit and said fourth

circuit are the same circuit (see Lo, fig.1, col.2, lines 16-53).

Regarding claim 25, Brody and Lo further teaches the assignment manager of

claim 23 further comprising a fourth circuit for assigning said user to a layer in response

to the value of a first user transmission characteristic of a transmission from said user

relative to said adjusted transmission characteristic threshold (see Lo, fig.1, col.1, lines

39-57, col.3, line 61 to col.4, line 8).

Regarding claim 27, Brody and Lo further teaches the assignment manager of

claim 23 wherein said transmission characteristic threshold is a threshold corresponding

to the size of the data to be transmitted to or from said user (see Lo, fig.1, col.3, line 61

to col.4, line 8).

Regarding claim 29, Brody and Lo further teaches the assignment manager of

claim 23 wherein said transmission characteristic threshold is a threshold corresponding

to the velocity of said user (see Brody, col.6, lines 43-56, col.7, lines 4-24).

Regarding claim 31, Brody and Lo further teaches the assignment manager of

claim 23 wherein said first operating characteristic corresponds to an average number

of users (see Brody, fig.13, col.24, lines 6-28, col.25, line 50 to col.26, line 7).

Regarding claim 32, Brody and Lo further teaches the assignment manager of

claim 23 wherein said first operating characteristic corresponds to the expected system

load as seen by said user (see Brody, col.7, lines 4-41).

Regarding claim 35, Brody and Lo further teaches the assignment manager of

claim 32 wherein said first balancing metric is determined by calculating the number of

users in the first layer of said network and said second balancing metric is determined

by calculating the number of users in said second layer of said network (see Lo, fig.1,

col.1, lines 39-57, col.3, line 61 to col.4, line 8).

Allowable Subject Matter

3.   Claims **4, 6, 9-10, 15, 17, 20-21, 28, 30, and 33-34** are objected to as being

dependent upon a rejected base claim, but would be allowable if rewritten in

independent form including all of the limitations of the base claim and any intervening

claims.

Conclusion

4.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Khai M. Nguyen whose telephone number is

571.272.7923. The examiner can normally be reached on 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, George Eng can be reached on 571.272.7495. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Khai Nguyen
Au: 2617   3/18/2006

GEORGE ENG
SUPERVISORY PATENT EXAMINER